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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/643,266	08/19/2003	Phillip C. Harris	2003-IP-009898U1	4630

7590 09/26/2005

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EXAMINER
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SMITH, MATTHEW J

ART UNIT	PAPER NUMBER
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3672

DATE MAILED: 09/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	10/643,266	HARRIS ET AL.	
	Examiner	Art Unit	
	Matthew J. Smith	3672	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 25 July 2005.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-46 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 21-23 and 44-46 is/are allowed.
- 6) ☒ Claim(s) 1, 2, 6-8, 12, 13, 24, 25, 29-31, 35 and 36 is/are rejected.
- 7) ☒ Claim(s) 3-5, 9-11, 14-20, 26-28, 32-34, and 37-43 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.


#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>15Apr05</u> .   | 6) <input type="checkbox"/> Other: _____                                    |

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***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, 6-8, 12, 13, 24, 25, 29-31, 35, and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stahl et al. (4951921) in view of Burns et al. (4578201) and Mitchell et al. (6242390).

Stahl et al disclose a method of fracturing (col. 5, line 34) a subterranean zone penetrated by a well bore having a temperature up to 400 degrees F (col. 12, line 41) comprising pumping a viscous, aqueous fracturing fluid into the subterranean zone at a rate and pressure sufficient to fracture the zone, salt water (col. 22, line 22) fluid, a water viscosity increasing terpolymer of 2-acrylamido-2-methylpropane-sulfonic acid (col. 20, lines 3-4), acrylamide (col. 16, line 30) acrylic acid (col. 34, line 32), and recognizing carbon dioxide (col. 1, lines 65-66) and foamed solutions (col. 2, line 10) in compositions for an enhanced recovery method but not a foaming agent, gas, or a viscosity breaker for effecting a controlled reduction in the viscosity of the fracturing fluid.

Burns et al. describe a fracturing fluid composition having a foaming agent using carbon dioxide (col. 2, lines 57-59) in the 5% to 95% volume range and that considers high temperature (col. 5, line 68), a viscosity increasing polymer (co. 13, lines 40-41), and reducing viscosity (col. 16, lines 59-60) to be pertinent to the fluid.

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Mitchell et al. present sodium bromate breaker (col. 6, lines 23-24) in encapsulated form (col. 21, line 53) used to reduce the viscosity during cleaning up a fracturing fluid.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to use a foaming agent with carbon dioxide and add a viscosity breaker to the Stahl et al. composition, as described by Burns et al. and as presented by Mitchell et al., in order to thicken the acid (Burns et al., col. 1, line 33) and recover the fracturing fluid (Mitchell et al., col. 1, lines 37-38), respectively.

***Allowable Subject Matter***

Claims 21-23 and 44-46 are allowed.

Claims 3-5, 9-11, 14-20, 26-28, 32-34, and 37-43 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Response to Arguments***

Applicant's arguments, see page 15, filed 25 July 2005, with respect to the rejection of claims 1, 2, 6, 7, 12, 13, 24, 25, 29, 30, 35, and 36 under 35 U.S.C. 103 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new rejection has been made in view of Burns et al. The examiner contends Burns et al. is consistent with the Stahl et al. disclosure in terms of being pertinent to the high temperature and viscosity limitations.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew J. Smith whose telephone number is 571-272-7034. The examiner can normally be reached on T-F, 9-4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David J. Bagnell can be reached on 571-272-6999. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



David Bagnell  
Supervisory Patent Examiner  
Art Unit 3672

MJS *MJS*  
20 September 2005